CLAIMS

1. A hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability containing C: 0.08 to 0.35%, Si: 1.0% or less, Mn: 0.8 to 3.5%, P: 0.03% or less, S:0.03% or less, Al:0.25 to 1.8%, Mo:0.05 to 0.35%, and N:0.010% or less and having a balance of Fe and unavoidable impurities, said hot dip galvanization steel sheet characterized in that said steel sheet has a metal structure having ferrite, bainite, by area ratio, 0.5% to 10% of tempered martensite, and, by volume percent, 5% or more of residual austenite.

2. A method of production of a hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability characterized by hot rolling a slab having the steel ingredients as set forth in claim 1, coiling the sheet at a temperature of 400 to 750°C, cooling, annealing by a continuous annealing process at a temperature of 680 to 930°C, cooling to the martensite transformation point or less, then hot dip galvanizing the sheet, during which heating to 250 to 600°C, then hot dip galvanizing it.

3. A method of production of a hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability as set forth in claim 2, characterized by cooling the steel sheet to the martensite transformation point or less of said continuous annealing process, then pickling it, or not pickling it, then pre-plating the steel sheet with one or more of Ni,Fe,Co,Sn, and Cu to 0.01 to 2.0 g/m^2 per side.

4. A method of production of a hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability as set forth in claim 2, characterized by alloying the galvanized layer after said hot dip galvanization process.

5. A method of production of a hot dip galvanized

high strength steel sheet excellent in plating adhesion and hole expandability as set forth in claim 2 or 4, characterized by post-treating said galvanized layer or galvannealed layer with one or more of chromate treatment, inorganic film coating, chemical conversion, and resin film coating.

6. A hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability characterized by comprising the hot dip galvanized high strength steel sheet of claim 1 further containing, by mass%, Ti: 0.01 to 0.3%, Nb: 0.01 to 0.3%, V: 0.01 to 0.3%, Cu: 1% or less, Ni: 1% or less, Cr: 1% or less, and B: 0.0001 to 0.0030%.

7. A method of production of a hot dip galvanized high strength steel sheet excellent in plating adhesion and hole expandability as set forth in claim 2, characterized in that the hot dip galvanized high strength steel sheet of claim 1 further contains, by mass%, Ti: 0.01 to 0.3%, Nb: 0.01 to 0.3%, V: 0.01 to 0.3%, Cu: 1% or less, Ni: 1% or less, Cr: 1% or less, and B: 0.0001 to 0.0030%.